REMARKS

1. 10/17/2005 Telephonic Interview

The Examiner is thanked for the opportunity to discuss the rejections of claims 1-4 and 9.

As a result of the interview, besides claims 1 and 9, claims 3, 4, 7 and 8 were also amended to remove the terms glucose and mono-saccharide.

Applicant explained that the principal reference cited by the Examiner, US Pat. No. 3,014,026 was not directed to a Maillard Reaction Product because the product obtained according to the teachings of the '026 patent is an amorphous, white granular soluble solid. (Col 3, ln 73 – Col. 4, ln 1). By contrast, Maillard Reaction Products, are non-white and are mostly brown or black in color. The Examiner agreed and suggested an allowable amendment to claim 1 would be to state that the metal chelate produced is a Maillard Reaction Product.

2. Agrument related to Prior Art References.

Also discussed with the Examiner during the 10/17/2005 Telephonic Interview were each of the 4 cited references which will now be discussed below in greater detail.

i. Rejection based on U.S. Pat. No. 3,014,026.

The Examiner states in the Office Action paragraph 4 that the '026 patent discloses the reaction between an amino acid, monosaccharide and ferric chloride and therefore anticipate the rejected claims.

The '026 patent does not disclose such a reaction. Rather, it discloses combining a monosaccharide and an amino acid compound in a buffered solution using sodium bicarbonate to form a monosaccharide-amino acid product. (Col. 3, lines 1-10). Once this product is formed, a metal salt is added to form a metal chelate. (Col. 3, lines 32-34).

The '026 patent discloses nine separate tests for making an iron chelate. Each test separately mixes an amino and sugar component in a buffered solution and thereafter evaporated the product

solution to form a dried amorphous product. Exceptions were tests 7 and 8 where the product was concentrated into a thick syrup. (Col. 5, lines 27-53).

Pending claims 1-4 require the mixing of an amino component, sugar component and a metal component. The '026 patent does not teach or infer mixing of all three components at the same time.

With respect to claim 9, Applicant has amended claim 9 deleting glucose and monosaccharide as sugar components. The '026 reference is directed to usage of monosaccharides and further states that neither monosaccharides nor the naturally occurring amino acids will by themselves chelate ferric iron. (Col. 3, lines 42-44). Further, the '026 reference states preferred use of glucose, glucuronic acid or lactones. (Col. 3, lines 47-48). Applicant has also amended claims 3, 4, 7, 8, and 9 to remove glucose and monosaccharide as sugar components and now believes the '026 reference is avoided as an anticipatory reference.

ii. Rejection based on Rendleman et al. reference.

The Examiner uses the Rendleman et al. reference to reject claims 1-4 and 9 because it discloses the formation of a copper chelate by the reaction of D-glucose, glycine and Cu^{2+} ions (page 313 of the reference).

Rendleman et al. investigates the influence of copper on the browning reaction between glucose (sugar) and glycine (amino acid). Rendleman, Page 312. This is in contrast to the Applicant's invention which is to make water soluble metal chelates using Maillard reaction.

The test results indicate the product produced is insoluble. Rendleman, Page 323, Table III. By contrast, the test results of the present application produce a water soluble product. Specification, para [0025] & test results.

Pending claim 1 describes the invention as *a soluble metal chelate containing solution.* Additionally, claim 9 describes the invention as *a solubilized metal chelate solution.*

Rendleman et al. is not attempting to make metal chelates. Rather, the procedure creates

insoluble melonoidins which occur from the reaction of glucose and glycine at high temperature. Again, only a very small amount of copper is used and this is solely for determining whether copper has any effect on the browning rate between glucose and glycine. Rendleman, Page 314.

By contrast, Applicant is providing a sufficient amount of a metal salt to react with a sufficient amount of amino and sugar components to form a "soluble" metal chelate containing solution. Rendleman does not teach, nor suggest mixing a sufficient amount of metal salt.

iii. Rejection based on the Fallico et al. reference.

The Examiner uses the Fallico et al. reference to reject claims 1-4 and 9 because it discloses the reaction between glucose, phenylalanine and iron chloride resulting in the formation of an iron chelate. (page 2256 of the reference).

The Fallico et al. reference investigates the influence of hexanal (aldehyde) and iron on the development of colored compounds in an aqueous glucose (amino acid). (Fallico, Page 2256).

Fallico does in fact test a combination of glucose, phenylalanine, and iron chloride. Fallico, Page 2256, Table 1, Group J. which is the combination of materials presented in Applicant's independent claim 1.

However, the testing in Fallico et al. clearly was performed at high temperature conditions i.e. 140 Deg C. Fallico page 2256. As such, all products produced by the reaction, including Group J were precipitation of melanoidins, i.e. insoluble products. Fallico, Page 2260. By contrast, the test results of the present application produce water soluble product. [Specification, para 0025 & test results].

Fallico was not concerned with creating soluble chelated products. The entire focus of the article was directed at the coloring of reactants and testing occurred at 140 deg C (approx 310 deg F). Fallico, Page 2256. It is this high temperature that contributes to an insoluble product being formed.

By contrast, the Applicant uses a substantially lower temperature.

> "Although heating is used, the heat is significantly less than the high temperature heat (i.e. >350 deg F) which is typically used in the thermal processing of food combinations during cooking. The temperature used according to my method is at a level so that none, or only a de minimus amount of insoluble melanoidins are formed." Specification, Paragraph [0020].

Since Fallico et al. is directed to a final chelated product which is insoluble, the same argument is presented as for rebutting the Rendleman et al. reference i.e. the pending claims are directed to forming a final metal chelated product that is soluble while the reference discloses an insoluble product.

iv. Rejection based on the O'Brien et al. reference.

The O'Brien et al. reference was the basis to reject claims 1-4 and 9 because it discloses the formation of a metal chelate between a Maillard reaction product (fructose and glycine) and a metal ion from a metal chloride salt.

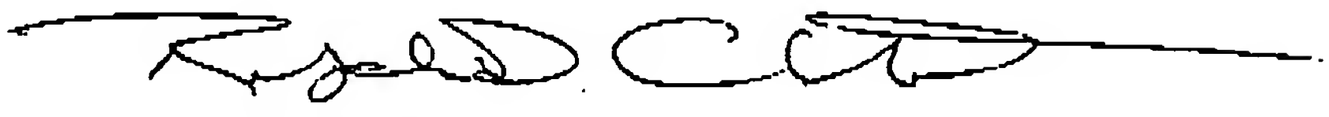
The methodology used in O'Brien et al. to create fructosyl glycine is different. O'Brien et al. teaches the combining of glucose and glycine in absolute methanol and subsequent evaporation resulting in a brown syrup which thereafter underwent separation by trichloroacetic acid on a bed of cation exchange resin to obtain fructosyl glycine. (Page 18 "Materials and Methods Section").

By contrast, Applicant's claims require mixing the components in water. Since by definition "absolute methanol" is devoid of water, this reference can not anticipate the rejected claims.

CONCLUSION

It is believed the pending claims are in a condition for allowance and a Notice of Allowance is requested.

Respectfully submitted,



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Ralph D. Chabot
Attorney for Applicant